Sub 02

What is claimed is:

1. A laser oscillator in which laser light is irradiated by pumping a laser medium using pumping laser light generated from a semiconductor laser, wherein said pumping laser light generated from said semiconductor laser is condensed to irradiate upon said laser medium with a concave mirror and the core axis of said pumping laser light which is reflected on said concave mirror has a predetermined angle with respect to the optical axis of said laser medium.

2. A light scattering type particle detector, using a semiconductor laser as a light source, for detecting particles contained in sample fluid which defines a flow path, wherein laser light generated from said semiconductor laser is condensed to irradiate upon said flow path with a concave mirror and thereby a particle detecting region is defined.

3. A light scattering type particle detector, using a semiconductor laser as a light source, for detecting particles contained in sample fluid which defines a flow path, wherein laser light generated from said semiconductor laser is condensed to irradiate upon said flow path with a concave mirror and a condenser lens, and thereby a particle detecting region is defined, and wherein the core axis of said laser light which is reflected on said concave mirror has a predetermined angle with respect to the optical axis of said condenser lens.

4. A light scattering type particle detector in which a laser medium is pumped by pumping laser light generated from a semiconductor laser, laser light irradiated from said laser medium is condensed to irradiate upon a flow path defined by sample fluid whereby a particle detecting region is defined, particles contained in the particle detecting region are detected, wherein said pumping laser light generated from said semiconductor laser is condensed to irradiate upon said laser medium with a concave mirror and the core axis of said pumping laser light which is reflected on said concave mirror has a predetermined angle with respect to the optical axis of said laser medium.

5. A laser oscillator in which pumping laser light generated from a semiconductor laser is condensed to irradiate upon a laser medium with a condenser lens, said laser

medium is pumped, and thereby laser light is irradiated, wherein the optical axis of said semiconductor laser has a predetermined angle with respect to the optical axis of said laser medium.

6. A light scattering type particle detector in which said laser light irradiated from said laser oscillator according to claim 5 is condensed to irradiate upon a flow path defined by sample fluid, and thereby a particle detecting region is defined, particles contained wherein being detected by receiving scattered light generated by said laser light.

7. A light scattering type particle detector comprising:

a laser medium pumped by pumping laser light;

a reflecting mirror on which laser light irradiated from said laser medium is reflected;

a flow path defined by sample fluid and being provided between said laser medium and said reflecting mirror; and

a particle detecting region defined by irradiating said laser light to the flow path,

said light scattering type particle detector being for detecting particles contained in said particle detecting region by receiving scattered light generated by said laser light,

wherein the optical axis of said laser medium and the optical axis of said reflecting mirror are allowed to coincide with each other and a setting angle adjusting means is provided for adjusting setting angles of said laser medium and said reflecting mirror with respect to a setting block for each so as to make the optical axes intersect said flow path.

8. A light scattering type particle detector according to claim 7, wherein said setting angle adjusting means comprises:

a laser medium setting member to which said laser medium is fixed, the setting angle of which laser medium setting member is adjustable with respect to said setting block for the laser medium;

a reflecting mirror setting member to which said reflecting mirror is fixed, the setting angle of which reflecting mirror setting member is adjustable with respect to said setting block for the reflecting mirror; and

elastic members which are interposed between said laser medium setting member and said setting block for the laser medium and between said reflecting mirror setting member and said setting block for the reflecting mirror.

9. A light scattering type particle detector according to claim 8, wherein said elastic members are O-rings comprised of rubber.

10. A laser oscillator in which pumping laser light generated from a semiconductor laser is condensed to irradiate upon a laser medium with a condenser lens, said laser medium is pumped, and thereby laser light is irradiated, wherein a setting position adjusting means for said semiconductor laser is provided for superposing the intensity distribution of said pumping laser light generated from said semiconductor laser on the intensity distribution of said laser light irradiated from said laser medium.

11. A laser oscillator in which pumping laser light generated from a semiconductor laser is condensed to irradiate upon a laser medium with a condenser lens, said laser medium is pumped, and thereby laser light is irradiated, wherein a setting position adjusting means for said condenser lens is provided for superposing the intensity distribution of said pumping laser light generated from said semiconductor laser on the intensity distribution of said laser light irradiated from said laser medium.

12. A laser oscillator in which pumping laser light generated from a semiconductor laser is condensed to irradiate upon a laser medium with a condenser lens, said laser medium is pumped, and thereby laser light is irradiated, wherein a setting position adjusting means for said semiconductor laser and a setting position adjusting means for said condenser lens are provided for superposing the intensity distribution of said pumping laser light generated from said semiconductor laser on the intensity distribution of said laser light irradiated from said laser medium.

13. A light scattering type particle detector in which said laser light irradiated from said laser oscillator according to any one of claims 10, 11 and 12 is directed to a flow

path defined by sample fluid, and thereby a particle detecting region is defined, particles contained in which particle detecting region are detected by receiving scattered light generated by irradiating said laser light onto said particles.

14. A laser oscillator in which pumping laser light generated from a pumping light source is condensed to irradiate upon a solid-state laser with a condenser means and laser light irradiated from said solid-state laser is allowed to reflect back to said solid-state laser from a reflecting means, wherein said condenser means has a surface having different radii of curvature in the parallel direction and the perpendicular direction with respect to the flow path.

15. A laser oscillator in which pumping laser light generated from a pumping light source is condensed to irradiate upon a solid-state laser with a condenser means and laser light irradiated from said solid-state laser is allowed to go back to said solid-state laser by a reflecting means, wherein said reflecting means has a surface having different radii of curvature in the parallel direction and the perpendicular direction with respect to the flow path.

16. A laser oscillator in which pumping laser light generated from a pumping light source is condensed to irradiate upon a solid-state laser with a condenser means and laser light irradiated from said solid-state laser is allowed to go back to said solid-state laser by a reflecting means, wherein both of said condenser means and said reflecting means have surfaces having different radii of curvature in the parallel direction and the perpendicular direction with respect to the flow path.

17. A light scattering type particle detector in which said laser light irradiated from said laser oscillator according to any one of claims 14, 15 and 16 is directed to a flow path defined by sample fluid, and thereby a particle detecting region is defined, particles contained in which particle detecting region are detected by receiving scattered light generated by irradiating said laser light on said particles.